



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

JOURNAL OF MYCOLOGY.

Vol. I. MANHATTAN, KANSAS, APRIL, 1885. No. 4.

[CONTINUED FROM PAGE 40.]

ENUMERATION OF THE NORTH AMERICAN CERCOSPORÆ.

WITH DESCRIPTIONS OF THE SPECIES.

BY J. B. ELLIS AND BENJAMIN M. EVERHART.

67. *CERCOSPORA MONOICA*, Ell. & Hol. *Jour. of Mycol.* I, p. 6.

Epiphyllous, forming clusters of minute, snuff-brown tufts on brown, dead spots with a yellow shaded border, and on the green parts of the leaf which soon become yellowish and finally brown. Hyphæ densely tufted, pale brown, continuous, abruptly undulate and denticulate above, $35 \times 2\frac{1}{2} \mu$. Conidia slender, nearly straight, yellowish, granular, becoming indistinctly 3—8-septate. Differs from *C. tuberosa*, E. & K. (which is the same as *C. glaucescens*, Winter in Rabh. F. Eur. 3080) in its epiphyllous growth, larger tufts of hyphae and in its shorter, narrower, and less distinctly septate conidia.

On *Amphicarpæa monoica*, July, Iowa (Holway.)

68. *CERCOSPORA GNAPHALII*, Hark. *Bull. Cal. Acad. Sci.*, Feb. 84, p. 38.

"Spots broad, indeterminate. Tufts aggregated. Hyphæ short, brown. Conidial pale brown, attenuated above. 3—7 septate, $120 \times 16 \mu$.

On *Gnaphalium*, Cal. (Harkness.)

69. *CERCOSPORA GOSSYPINA*, Cke. *Grev. XII*, p. 31. *Rav. F. Amer.* 583.

Hyphæ epiphyllous, flexuous, brown (120—150 μ), on indistinct, brownish, indeterminate spots. Conidia attenuated above, flexuous, 5—7 septate, hyaline, 70—100 x 3 μ .

On leaves of *Gossypium*, S. Carolina (Ravenel.)

70. CERCOSPORA CALICARPAE, Cke. Grev. VI, p. 140. Rav. F. Amer. 64.

Epiphyllous. Spots indeterminate, reddish brown. Hyphæ short, simple, dark, septate. Conidia cylindrical, scarcely attenuated, 4—5 septate, 60—70 μ long.

On leaves of *Callicarpa*, Fla. (Ravenel.)

71. CERCOSPORA SANGUINARIAE Pk.

Spots large, indeterminate, smoky-brown, sometimes obscurely mottled or subreticulate, with darker lines on the upper surface. Hyphæ hypophyllous, few, scattered or subcæspitose, rather long, colored, often nodulose above. Conidia, subcylindrical, obtuse, 4—8 septate, colorless, 35—60 μ long.

On living or languishing leaves of *Sanguinaria Canadensis*, Aug., N. Y. (Peck.)

Owing to the scattered mode of growth of the hyphæ, the fungus is scarcely visible, but the large, smoky-brown spots are very conspicuous.

72. CERCOSPORA RANUNCULI, Ell. & Hol. Jour. of Mycol. I, p. 5.

Forming brown, indefinitely limited patches on the under side of the leaves which become dirty-yellowish above, without the formation of any well defined spots. Hyphæ in scattered tufts, brown, continuous, abruptly undulate, crooked and subnodulose above, 76—90 x 3—4 μ . Conidia slender, nucleolate, becoming 4—6 septate, 70—85 x 3—4 μ .

On leaves of *Ranunculus repens*, July, Iowa (Holway.)

73. CERCOSPORA PASSALOROIDES, Winter. Hedwigia, May, 1883, p. 71.

Spots indeterminate, yellowish or slightly fuscous, at length occupying nearly the whole leaf. Hyphæ fasciculate, simple or sparingly branched, torulose, especially towards their tips, remotely septate, subfuscous, 50—70 x 5 μ . Conidia subclavate, slightly attenuated above, 1—2 septate, somewhat constricted at the lower septum, slightly fuscous, 23—65 x 5—6 μ .

On leaves of *Amorpha canescens*, Illinois (Seymour.)

74. CERCOSPORA OCCIDENTALIS, Cke. Hedwigia, 1878, p. 39. Rav. Fungi Amer. 65.

Epiphyllous on indefinite, inconspicuous, suborbicular spots (2—3 mm.), only noticeable by being a little darker than the other parts of the leaf. Hyphæ short, brown, densely fasciculate on a tubercular base, septate, brown. Conidia cylindric-clavate, attenuated above, hyaline, multiseptate, 100—120 μ long.

On leaves of *Cassia occidentalis*, South Carolina.

61. CERCOSPORA DESMODII, E. & K. Bull. Tor. Bot. Club, XI, p. 121.

On reddish brown, roundish or irregularly shaped and rather indefinitely limited spots, 2—3 mm. in diameter. Hyphæ mostly hypophylloous, 70—80 x 3—4 μ , brown, 1—3 septate, undulate or often abruptly bent above, rising in loose spreading tufts of 6—8 from a minute tubercular base. Conidia oblong-cylindric and nucleate, becoming ob-clavate-cylindric and mostly 3 septate, 30—50 x 3.5—4 μ . The spots become more or less confluent and the leaf assumes a reddish brown hue.

On *Desmodium acuminatum*, July, Kansas (Kellerman.)

e. Spots none, or at least not very conspicuous.

a. Tufts scattered.

76. CERCOSPORA SPARSA, Cke. Grev. XII, p. 31. Rav. F. Amer. 590.

Hyphæ hypophylloous, short, scattered, forming indeterminate fuscous patches which appear under the lens as a scanty, fuscous down. Conidia attenuated above, 2—3 septate, hyaline, 50—70 x 3 μ .

On leaves of *Kalmia latifolia*, S. Carolina (Ravenel.)

77. CERCOSPORA SPHÆRIÆFORMIS, Cke. Grev. VI, p. 140. Rav. F. Amer. 63.

Hyphæ amphigenous, short, simple, dark brown, in densely fasciculate, sphæriæform tufts which are collected in groups forming dark brown patches on the leaf. Conidia linear, attenuate above, multisepitate, 60—80 μ long.

On (elm?) leaves, Fla. (Ravenel.)

78. CERCOSPORA PULVINULA, C. & E. Grev. VII, p. 40. N. A. F. 644.

Punctiform, hypophylloous. Hyphæ very short, collected into minute subolivaceous tufts sprinkled over the lower surface of the leaf. Conidia cylindrical, faintly 1—2 septate, hyaline, 20—35 μ long.

On leaves of *Ilex opaca*, Newfield, N. J.

79. CERCOSPORA EPILOBII, Schn. De Thuemen, Fungi Austriaci, 532. Mich. II, p. 642.

"Tufts punctiform, gregarious, subolivaceous. Hyphæ fasciculate, round, 50—70 x 5 μ , slightly tortuous, denticulate, olivaceous, subhyaline above, guttulate, spuriously septate. Conidia cylindrical, 40—50 x 5—5 $\frac{1}{2}$ μ 2—3 septate, not constricted, guttulate, hyaline."

On *Epilobium alpinum*, White Mts., N. H. (Farlow.)

The description is copied from Michelia. We have seen no specimens.

80. CERCOSPORA RAFINESQUIÆ, Hark. Cal. Bull. Acad. Sci., Feb 1884.

"Hypophylloous, in minute tufts covering a great part of the leaf; hyphæ brown, very short. Conidia oblong, brown, 2—7 septate, 20—30 x 6 μ .

On living leaves of *Rafinesquia Californica*, San Francisco, Cal., May."

81. CERCOSPORA DIOSPYRI, Thuem. Mycotheca Universalis, 1273. Grev. XII, p. 31.

Hyphæ nearly straight or somewhat flexuous, continuous, slender, oliveaceous, collected in small tufts which form orbicular patches (3—4 mm.)

on the under side of the leaf which is marked on the upper side with corresponding rusty brown, indefinite spots. Conidia obclavate, subacute at the ends, 4—7 septate, and sometimes constricted at the septa, nearly hyaline, 30—50 x 4 μ .

On leaves of *Dyospyros Virginiana*, S. Carolina (Ravenel.)

82. *CERCOSPORA VELUTINA*, E. & K. Bull Torr. Bot. Club, XI, p. 122.

Amphigenous. Hyphae pale olivaceous, simple, continuous, more or less bent and toothed above, forming a dense, velvety growth over the surface of little dark-colored tubercular swellings 1 mm. or less in diameter, which are collected in groups or irregularly scattered over the surface of the leaf. Conidia pale olive-brown, subequal or attenuated above, curved, sparingly septate, 75—100 x 3 μ .

On leaves of *Baptisia*, August, Kansas (Kellerman.)

b. *Tufts effused.*

83. *CERCOSPORA POLYGONORUM*, Cke. Hedwigia, March, 1878, p. 39. Rav. Fungi Amer. 66. Ellis N. A. F. 549. *Helminthosporium Hydropiperis*, Thuem. M. U. No. 1087.

Hyphae hypophylloous, loosely fasciculate, brown, sparingly septate, 75—100 x 5—6 μ , forming olive black suborbicular patches ($\frac{1}{4}$ —1 cm) or often continuous over the entire surface of the leaf which, if still young and green when attacked by the fungus, shows on the upper surface pale yellowish spots, indicating the position of the patches of hyphae beneath. Conidia cylindrical, 3—5 septate, with a slight fuscous tint, 50—80 x 7—9 μ .

According to the description in Hedwigia this should be *epiphyllous*, but all the specimens in the three collections cited show the fungous on the *lower* surface of the leaves. There is a slight discrepancy between the description in Hedwigia and that given by De Thuemen in M. U., but the *specimens* are certainly the same. We have not found conidia with more than 6 septa, generally 3—5. We can not say with certainty whether De Thuemen's specific name should have preference. Cent. XI, (Mycotheca) was issued in 1878, but whether before or after the March No. of Hedwigia, we cannot say.

84. *CERCOSPORA NIGRICANS*, Cke. Grev. XII, p. 30.

Hyphae epiphyllous, fasciculate, short, brown, forming indeterminate, irregular, dark colored patches. Conidia cylindrical or slightly attenuated above, 3—5 septate, hyaline, 40—60 x 2 μ .

On leaves of *Cassia obtusifolia*, S. Carolina (Ravenel.)

The fungus appears at first as groups of minute, yellowish pustules (much resembling an *Entyloma* to outward appearance) soon becoming brown in the center and finally overspread with the dark brown hyphae. There are no definite spots.

85. *CERCOSPORA OLIVACEA* (B. & Rav.) *Helminthosporium olivaceum*, Berk. & Rav. Grevillea III, p. 102. *C. Berkeleyi*, Cke., Grev. XII, p. 30. *C. Seymouriana*, Winter, Bull. Torr. Bot. Club, X, p. 50. *C. olivacea*, (B. & Rav.) Rab.-Winter, Fungi, 2974.

Hyphæ hypophyllous, fasciculate, short (40—60 μ), torulose, sparingly septate, brown, forming indeterminate, dark brown patches or spreading over the greater part of the leaf. Conidia attenuate clavate, 80—120 x 5—7 μ , multiseptate and often constricted at the septa, brownish.

On living leaves of *Gleditschia triacanthos*, Carolina (Ravenel). Illinois (Seymour.)

86. *CERCOSPORA GRISEA*, C. & E. Grev. V, p. 49. N. A. F. 49.

Hyphæ short, simple, fuscous, fasciculate, covering the leaves and stem with minute, punctiform tufts scarcely distinguishable by the naked eye but imparting a grayish color to the affected parts. Conidia linear, multiseptate, 100—125 μ long.

On living leaves, stems and flowers of *Polygala lutea* and *P. cruciata*. Newfield, N. J.

87. *CERCOSPORA CONSOCIATA*, Winter Hedwigia, May, 1883, p. 70.

Tuft hypophyllous, densely gregarious, forming large, dark colored patches generally limited by the veinlets of the leaf which shows corresponding dark or greenish spots above. Hyphæ fasciculate, short, 35—50 x 5 μ , nodulose, dark, septate. Conidia very narrow-subclavate-filiform, slightly thickened below, remotely multiseptate, with a pale fuscous tint, reaching 125 μ long, and 3½ μ thick below.

On living leaves of *Dipteracanthus ciliatus*, Illinois (Seymour.)

88. *CERCOSPORA SORDIDA*, Sacc. Mich. II, p. 149.

Hypophyllous, effused, forming dull olivaceous patches. Hyphæ loosely fasciculate, short, reddish-brown (under the microscope.) Conidia narrow-obclavate, 80—110 x 4 μ , apices acute, 4—6 septate, olivaceous.

On living leaves of *Tecoma radicans*, Ga. (Ravenel.) Found also at Newfield, N. J.

89. *CERCOSPORA EFFUSA* (B. & C.) *Cladosporium effusum*, B. & C. Grev. III, p. 106.

Hyphæ hypophyllous, fasciculate, subnodulose, 35—45 x 3 μ . Tufts much effused, forming indefinite, rusty brown patches on the lower side of the leaf which is marked above with pale yellowish, indefinite spots. Conidia subhyaline, cylindric-clavate, with one or more septa, 45—60 x 3—3½ μ .

On living leaves of *Lobelia syphilitica*, Iowa (Holway.), and *L. cardinalis*, Kansas (Kellerman.)

90. *CERCOSPORA MURINA*, E. & K. Bull. Torr. Bot. Club, XI, p. 122.

Hypophyllous, on large (.5—1 cm.), roundish, indefinitely limited, dirty brown spots (dirty white above). Hyphæ effused, mouse-colored, branched septate, clear fuscous brown, 75—100 x 3—4 μ . Conidia oblong or oblong-cylindric, 3-septate, brownish sometimes slightly constricted at the septa, 25—35 x 4—5 μ . Looks like a fine, mouse-colored down overrunning spots previously occupied (?) by another *Cercospora* (*C. granuliformis*, Ell. & Hol.)

On leaves of *Viola cucullata*, Kansas (Kellerman.)

91. *CERCOSPORA FUSCO-VIRENS*, Sacc. Mich. II, p. 149.

Hyphæ fasciculate-intricate, branching, 80—120 x 4 μ , flexuous, denticulate, septate-guttulate, of an olivaceous yellow, forming dirty greenish patches, either limited by the veinlets or spreading over nearly the whole lower side of the leaf which is indistinctly mottled with yellow above. Conidia elongated or fusoid, rather obtuse at each end, pale olive, curved, 30—40 x 5—6 μ , and 3—4 septate when mature.

On living leaves of *Passiflora lutea*, Cobden, Illinois, Oct. 1883. (Earle.)

92. CERCOSPORA PYRI, Farlow. Appalachia, Vol. III, p. 250.

"Hypophyllous, forming large, indefinite, blackish spots on the leaves. Hyphæ fasciculate, simple, nearly hyaline, stout, subdenticulate above, 30—60 x 5—7 μ . Conidia fusiform, mostly a little curved, 3—6 septate, hyaline, ends obtuse, 30—60 x 4—6 μ ."

On living leaves of *Pyrus arbutifolia*, Wisconsin (Pammel), New Hampshire (Farlow.)

93. CERCOSPORA ACETOSELLA, Ell. Bull. Torr. Bot. Club, VIII, p. 65.

Forming leaden gray patches on the withered leaves. Hyphæ erect, short, sparingly septate, fasciculate in minute tufts thickly scattered over the affected leaves. Conidia linear obclavate, nucleate (becoming septate?) 50—70 μ long.

On leaves of *Rumex acetosella*, Sept., Newfield, N. J.

94. CERCOSPORA DIOSCOREÆ, E. & M. Am. Nat., Dec. '82, p. 1003.

Hyphæ cæspitose, brown, scarcely septate, 30 x 3½ μ , forming indefinite, dirty brown patches (½—1 cm.) on the lower surface of the leaf which is mottled with brown and yellow above. Conidia yellowish subhyaline, subcylindrical, only slightly attenuated above, 3—8 septate, 50—90 x 4—5 μ .

On leaves of *Dioscorea villosa*, Penn. (Dr. Martin.)

95. CERCOSPORA CANA, Sacc. F. Ven. Nov. V, p. 188. N. A. F. 1248. *Fusidium canum*, Pass. in Thuem. M. U. 378.

Hypophyllous, effused, white, covering considerable areas of the leaves. Hyphæ continuous, subramose or denticulate above, hyaline, 30—35 x 4—5 μ . Conidia cylindric-obclavate, 60—90 x 4—5 μ (exceptionally 100—120 x 6 μ), 3—4-septate and guttulate, hyaline and slightly curved.

On leaves of different species of *Erigeron*, Eastern, Middle and Western States.

96. CERCOSPORA CLAVATA (Gerard) *Helminthosporium clavatum*, Ger. Bull. Torr. Bot. Club, V, p. 27. *Virgasporium clavatum* (Ger.) Cke. in Grevillea III, p. 182, and IV, p. 69, and *Cercospora clavata* (Ger.) Pk. in 34th Rep. N. Y. State Mus. p. 48. Ellis N. A. F. 823 (a.)

Spots small, numerous, irregular, indefinite, often confluent. Hyphæ hypophyllous, minutely tufted, abundant, short, thick, subflexuous, subnodulose, colored, 25—40 μ long. Conidia very unequal in length, cylindrical to bacillary, slightly colored, 40—125 μ long, 3—7 septate. The tufts of hyphæ are so numerous and crowded as to form a continuous, velvety stratum.

On living leaves of *Asclepias incarnata*, N. Y. (Peck & Gerard) and at Newfield, N. J., on *A. obtusifolia*.

N. A. F. 823 (b) on leaves of *Gerardia quercifolia* is probably distinct, but without fresh specimens we will not now separate it.

97. CERCOSPORA PHASEOLORUM, Cke. Grev. XII. p. 30. Rav. Fungi Amer. 584.

"Hyphæ epiphyllous, fasciculate, short, brownish on indeterminate, brownish, inconspicuous spots. Conidia sub-cylindrical, 3—5 septate, 40—50 x 4 μ , pallid.

On leaves of *Phaseolus*, S. Carolina (Ravenel.)

Spores not half as long as in *C. olivacea*, Sacc.

98. CERCOSPORA AMPELOPSIDIS, Pk. 30th Rep. N. Y. State Mus. p. 55. (*C. pustula*, Cke. Grev. XII, p. 30?)

Hyphæ fasciculate, brown, 2—3 septate, subundulate above, 70—90 x 6—7 μ , hypophyllous, forming brown patches 2—3 mm. in diameter and limited mostly by the veinlets of the leaf. Conidia subcylindrical, brown, 3—4 septate. The upper surface of the leaf is marked with dark brown spots around which it is a pale reddish tint.

On *Ampelopsis quinquefolia*, Bethlehem, N. Y. (Peck), Pennsylvania (Rau.) Found also in New Jersey.

The conidia on *C. pustula*, Cke., are said to be *hyaline*. We have not been able to find any conidia on the specimen in F. Am., but their general appearance is the same as that of the N. J. and Penn. specimens.

99. CERCOSPORA LUPINI, Cke. Hedwigia, 1878, p. 39. Rav. Fungi Amer. 67.

On indefinitely limited, inconspicuous, dark colored spots, scarcely distinguishable from the surrounding parts of the leaf. Hyphæ branching and septate, brown. Conidia cylindrical, straight, 3—5 septate, scarcely attenuated, hyaline, 50—70 x 3 μ .

On leaves of *Lupinus diffusus*, S. Carolina (Ravenel.)

100. CERCOSPORA RACEMOSA, E. & M. Am. Nat., Nov. 1884.

Effused in small (1—2 mm.) patches which are greenish at first, then rusty brown and often more or less confluent. Hyphæ interwoven, bearing the oblong or oblong cylindrical conidia in a racemose manner on short, lateral branches and at their tips. Conidia hyaline, 1—5 septate, 20—80 x 5 μ .

On the under side of leaves of *Teucrium Canadense*, Iowa (Arthur.)

This is certainly very closely allied to *C. ferruginea*, Fckl., differing principally in its shorter, paler spores, and it may be that a further comparison may reduce this to a mere variety of that species.

100 a. CERCOSPORA DULCAMARÆ (Pk.) Ramularia Dulcamaræ, Pk. 33d Rep. N. Y. State Mus. p. 30.

Hyphæ nodulose, abruptly bent and branched irregularly, pale brown (under the microscope), continuous, 30—60 x 5—7 μ , bearing the conidia

both terminal and lateral. Conidia oblong to cylindrical and clavate-cylindrical, 1—3-septate, brownish, 15—50 x 4—5 μ . The hyphae form indefinite, subviolaceous, or greenish-lead-colored patches on the lower surfaces of the leaf, and also more sparingly so above but without any distinct spots.

On leaves of *Solanum Dulcamara*, New York. These notes are from specimens received from Prof. Peck who remarks that "the spots are very unequal in size and often confluent and, when the leaf fades, retain their greenish hue for a longer time." This is still recognizable in the dry specimens (collected several years ago?) The brown hyphae as well as the character of the conidia must remove this from *Ramularia*. We certainly think it a good *Cercospora*. In the Report cited it is remarked that "this species in some respects approaches Peronospora." We can not say whether this was inadvertently written for *Cercospora*.

101. CERCOSPORA POLYTRICHA, Cke. Grev. VII, p. 35. Rav. F. Amer. 291.

Hypophyllous, forming broad, sooty colored patches but not on any definite spots at least none that are visible on the upper side of the leaf. Hyphae multiseptate, joints subquadrate, toruloid, brown. Conidia obclavate, biseptate, 30—50 μ long.

On leaves of *Quercus virens*, S. Carolina (Ravenel.) This is an anomalous species and is not improbably the conidial stage of some *Capnodium*. The hyphae spring mostly from a small tubercular base (rudimentary peritheciun.)

B. Hyphae nearly hyaline (*Cercosporella*, Sacc.)

102. CERCOSPORA CHIONEA, E. & K. Bull. Tor. Club, XI, p. 122.

Amphigenous, but mostly epiphyllous, on large (.5—1 cm., or, by confluence, 3—4 cm.) dark, reddish brown spots with a brown, yellow-shaded, but not raised, border. Hyphae densely tufted, subhyaline, mostly 18—30 x 4—5 μ , but often elongated to 35 or 40 μ and then somewhat undulate or crooked above. Conidia vermiform or clavate-cylindric, 54—90 x 4—5 μ . and 3—8-septate.

The conidia are very abundant and appear to the naked eye like a sprinkling of white powder on the brown spots. Different throughout from *C. cercidicola*, Ell.

On leaves of *Cercis Canadensis*, July, Kansas (Kellerman.)

104. CERCOSPORA PERSICA. Sacc. F. Ven. Nov. V, p. 189. Rab.-Winter Fungi, E., 3081.

Hyphae hypophyllous, filiform, somewhat branched above, continuous, hyaline, forming irregularly shaped, rather indefinitely limited white patches on the under side of the leaves which are correspondingly marked with pale, yellowish, indefinite spots above. Conidia cylindrical, 40—50 x 4—5 μ , imperfectly septate, or remotely guttulate, hyaline or subhyaline.

On peach leaves, Illinois (Earle.)

[CONTINUED ON PAGE 61.]